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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Foster §
Attorney Docket No: DP-309380 §
Serial No: 10/623,941 § Group Art Unit: 3748 §
Filed: 21 July 2003 § Examiner: Tran, Diem T §
Title: CYLINDER DEACTIVATION FOR REDUCED COLD START ENGINES §

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Katie Hales

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Commissioner for Patents
P.O. Box 1450
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RESPONSE TO FINAL OFFICE ACTION

Dear Sir:

This is in response to the Office Action dated 23 February 2005, and to which a response is due on 23 May 2005. The following is included:

Listing of Claims beginning on page 2.

Remarks and Arguments begin on page 10.

Conclusion is on page 12.

This listing of claims will replace all prior versions, and listings of the claims in the application:

Claim 1. (Previously presented) An exhaust system for a vehicle having an internal combustion engine with a plurality of cylinders, comprising:

an exhaust manifold for providing fluid communication of exhaust of the plurality of cylinders to a catalytic converter, said exhaust manifold comprising a first exhaust pipe portion and a second exhaust pipe portion, said first exhaust pipe portion being in fluid communication with said second exhaust pipe portion and said second exhaust pipe portion being in fluid communication with said catalytic converter, said first exhaust pipe portion providing a first fluid path for exhaust of a first plurality of cylinders of the engine and said second exhaust pipe portion providing a second fluid path for exhaust of a second plurality of cylinders of the engine, said second fluid path being shorter than said first fluid path; and

a controller for determining whether to deactivate said first plurality of cylinders in accordance with a predetermined engine starting condition, wherein deactivation of said first plurality of cylinders causes said second plurality of cylinders to operate at a condition corresponding to an engine output demand, wherein an exhaust of a first temperature is expelled by said second plurality of cylinders into said catalytic converter through said second fluid path, said first temperature being greater than an exhaust temperature that would be generated by said first and said second plurality of cylinders operating at said condition corresponding to said engine output demand, wherein the efficiency of said catalytic converter at engine start-up is increased as the catalytic converter will be brought to an operating temperature faster than a time required if no cylinders were deactivated and engine exhaust is flowing through both said first fluid path and said second fluid path.

Claim 2. (original) The exhaust system as in claim 1, wherein said first plurality of cylinders and said second plurality of cylinders are on opposite sides of the engine.